

AIRS Project Status

Tom Pagano
AIRS Project Manager
CalTech NASA JPL
4800 Oak Grove Dr. Pasadena, Ca 91109

tpagano@jpl.nasa.gov (818) 393-3917

May 21, 2013



Currently Flying NASA Earth Science Satellites

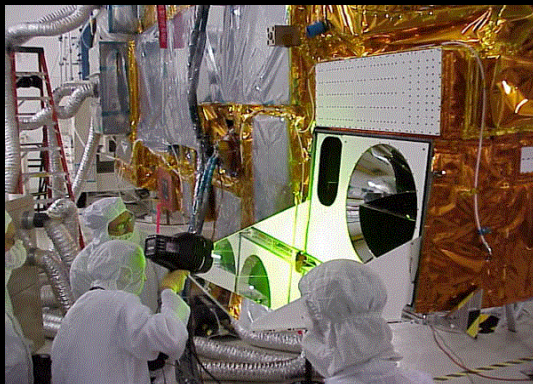
May 1, 2013





The EOS Aqua Spacecraft

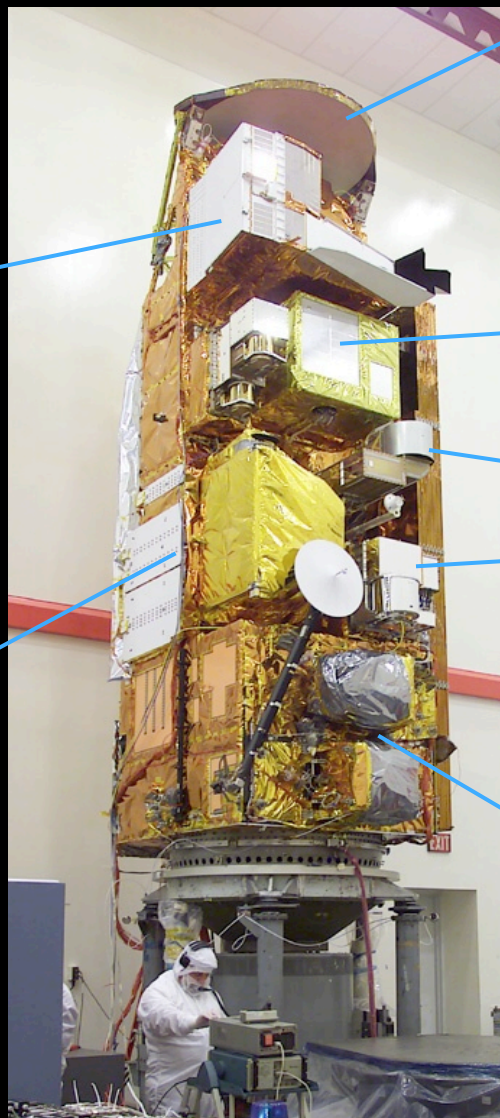
Launched May 4, 2002



Moderate Resolution Imaging Spectroradiometer (MODIS)
GSFC/Raytheon



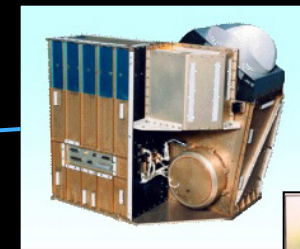
Atmospheric Infrared Sounder (AIRS)
JPL/BAE SYSTEMS



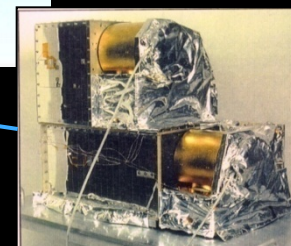
AQUA Spacecraft
GSFC/NGST



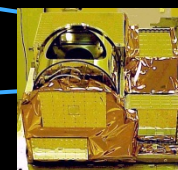
Advanced Microwave Scanning Radiometer (AMSR-E) MSFC/JAXA



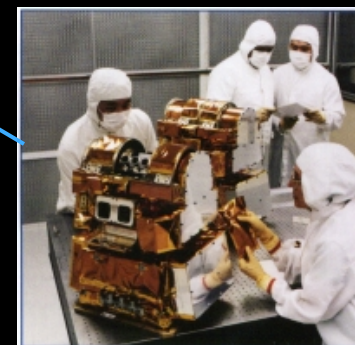
Advanced Microwave Sounding Units (AMSU-A/B)
JPL/Aerojet



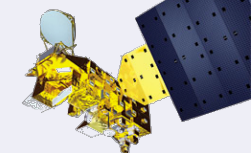
Humidity Sounder from Brazil (HSB)
JPL/Aerojet



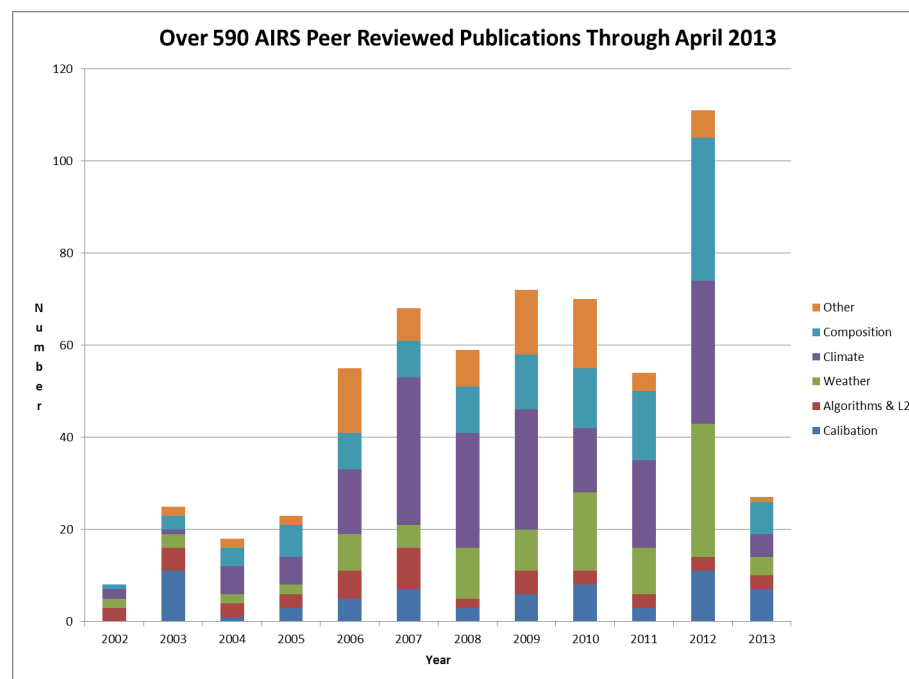
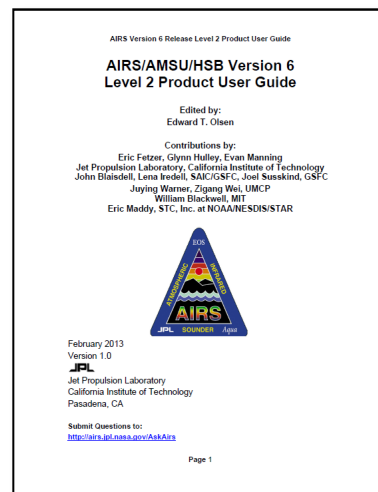
Clouds and Earth Radiant Energy System (CERES)
LaRC/NGST



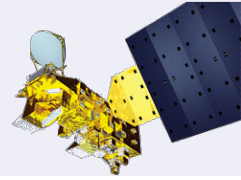
AIRS Project Recent Accomplishments



- Version 6 L2, L3 released and running at the DAAC. Over half the mission has now been re-processed
- V6 Documentation is now complete and online at the GES/DISC including user guides and test reports
- JPL participated in 2013 Aqua Senior Review. QA complete. Committee final comments/review not yet received.
- Instrument Operations, Anomaly Resolution and Calibration Reports
- Record Year in 2012 for Peer Reviewed Publications
- ROSES 2013 Aqua/Terra Science and Algorithm Maintenance Calls Released. We can expect new science investigators and algorithm developers from the selections.

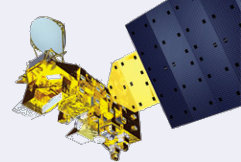


2013 Planned Milestones



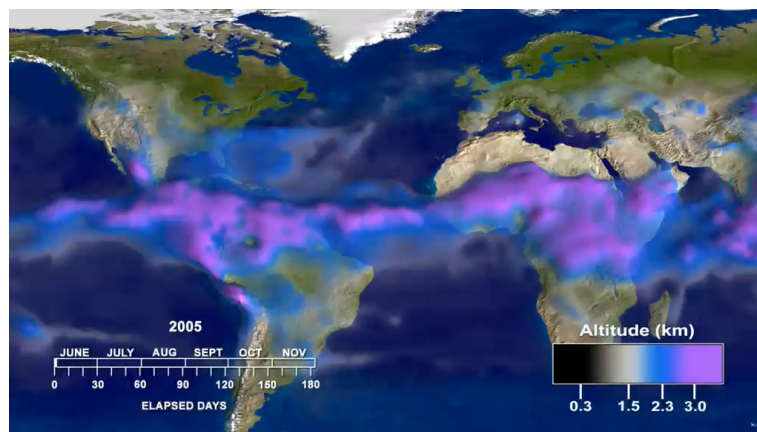
- Operations/Calibration
 - Operations Maintenance
 - Update instrument detector redundancy (Gain) table
 - Update Level 1B coefficients
 - Complete Level 1C
 - AIRS/CrIS/IASI Comparisons
- Science and Applications
 - Validate surface temperature and water vapor in V6
 - Develop verticality functions for AIRS under a variety of cloud types to support climate model utilization and OSSE studies
 - V5 Validation Report
 - Carbon Dioxide Version 6 Testing
 - V7 Algorithm Definition and Prototyping
 - Define Software Architecture for V7
 - Identify suitable products for transfer to applications (SPoRT)
 - Develop web-based browse capability for L2, L3, Climatology and Anomaly reporting

Community Needs Identify Areas of Further Research over the Next Few Years

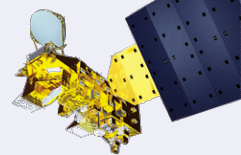


- Product Development Needs
 - Improved Error Estimation
 - Improved Cloud Clearing Algorithm
 - Retrieval of Cloud Properties
 - Higher Spatial Resolution
 - Explore use of data sets from other instruments
 - Improve Composition Products
 - Compatibility amongst AIRS/CrIS/IASI
 - *Workshop Tomorrow (5/21/13)*
- Support Weather Forecasting
 - Assimilation of Cloudy Radiances

- Additional Research Needs
 - Climatologies of all AIRS Products; Including Error Estimates
 - Retrieval of CO₂ Profile
- Radiance Calibration
 - Improved L1B Error Estimates
 - AIRS/CrIS/IASI Comparisons



Summary and Conclusions



- Aqua Spacecraft, AIRS and AMSU instruments operational
- Calibration still very good, but “Every mK counts” (Chahine)
- V6 Release a major milestone for the AIRS Team
- V6 Validation underway: Need community involvement!
- Version 7 ideas solicited. Project will implement changes desired by science team as possible within cost limitations.
- Expect increased usage of AIRS/AMSU products for science and applications in the coming years
- The AIRS Team continues to “Always Make Progress” so we will be ready!